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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,713	09/23/2005	Timothy Roderick Dalketh Scott	SPRUS55.002APC	6975
20995 7590 08/23/2007 KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614			EXAMINER MATTER, KRISTEN CLARETTE	
			ART UNIT 3771	PAPER NUMBER
			NOTIFICATION DATE 08/23/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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ED

<b>Office Action Summary</b>	<b>Application No.</b> 10/526,713	<b>Applicant(s)</b> SCOTT ET AL.	
	<b>Examiner</b> Kristen C. Matter	<b>Art Unit</b> 3771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/6/05 and 4/19/07</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

Upon further consideration, the previous restriction requirement issued by phone on June 20, 2007, has been withdrawn. Claims 1-39 have been treated on the merits.

### *Claim Objections*

Claim 13 is objected to because of the following informalities: in lines 2-3, "the opposite direction" should be changed to --an opposite direction-- to avoid a lack of antecedent basis. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 8, 9, 17, 19, 20, 21, 22, 23, 24, 26, 27, 28, and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Mavroidis et al. (US 6,379,393, herein referred to as "Mavroidis").

Regarding claims 1-3, 8-9, 27, and 28, Mavroidis discloses a movement facilitation device for facilitating movement of at least one joint of a patient's body in a pivotable manner (abstract, lines 6-9) comprising a smart material actuator (column 3, line 10), an operating means

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for operating the actuator in response to an input signal generated by a sensor and a controller (column 5, line 55-column 6, line 23, and column 3, lines 20-45), said sensor being capable of providing a feedback signal relating to a force on or exerted by the moved joint and the joint position to affect operation of the actuator, a support structure (column 6, line 20) for coupling the device to a patient's body, and a power supply (column 8, line 40). In addition, the system is capable of being used for passive motion therapy because the controller can continuously actuate the actuators.

Regarding claim 4, the support structure is capable of being coupled proximate the joint being moved (see Figures and column 6, line 20 which discusses the use of "tendons").

Regarding claim 5, Mavroidis discloses cables for coupling the actuators to the support structure (column 10, lines 30-40).

Regarding claim 17, Mavroidis discloses a lock (column 18, lines 40-45).

Regarding claims 20 and 21, Mavroidis discloses a plurality of movement facilitation devices that can be independently controlled by the controlling and operating means (column 5, line 60- column 6, line 5).

Regarding claim 22, Mavroidis discloses that first and second movement facilitation devices capable of working in opposition to one another for flexing and extending a joint (column 13, lines 20-40).

Regarding claim 23, a single movement facilitation device is capable of flexing and extending a joint depending on the arrangement of the bundles and how a single movement facilitation device is defined.

Regarding claim 24, Mavroidis discloses multiple facilitation devices to facilitate movement of at least 2 joints (i.e., Figure 25).

Regarding claim 25, Mavroidis discloses a computer for controlling operation of the device (column 19, line 29).

Regarding claim 26, Mavroidis discloses the device can be used for person's suffering from injury and surgeries (i.e., hand trauma and surgery).

Regarding claims 19 and 29, Mavroidis discloses feedback sensors for controlling the force or position of the joint so that a predetermined maximum is not exceeded (column 13, lines 10-20).

Claims 1-4, 6-8, 10-12, 20-25, and 27-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Cencer (US 6,312,398).

Regarding claims 1-4, 10, 11, 25, 27, 28, 29, Cencer discloses a movement facilitation device comprising an actuator capable of causing the joint to move in a pivotable manner, an operating means operating in response to an input signal from a feedback motion sensor, a controller to control operation of the device, a power source, a support structure in the form of a glove for coupling the device to a patient's body (see column 5, line 55-6, line 65 and Figure 1). Cencer also discloses that the controller (i.e., computer) is programmable for controlling operation of the device (column 6, lines 60-65).

Regarding claims 6-7 and 12, Cencer discloses cables (48) and sheaths (54) being associated with the support structure, and that the cables can pass over a position on top of the joint (see Figures 3 and 11).

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Regarding claim 8, Cencer discloses a motor (18) for facilitating movement of the joint.

Regarding claims 20-24, Cencer discloses that the devices can be used in a variety of configurations involving multiple actuators (i.e., can be considered multiple or singular movement facilitation devices) controlled independently by the controller for producing flexion and extension as well as omni-directional movement of one or more joints (column 6, lines 40-55).

Claim 39 is rejected under 35 U.S.C. 102(e) as being anticipated by Kinnunen et al. (US 6,619,134). Kinnunen et al. disclose a force position sensor comprising a light source (4), a detector means, and a return mechanism (2) for measuring forces and displacements (abstract).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 30-32 and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mavroidis. The device disclosed by Mavroidis has all of the structural limitations needed to perform the recited method steps and is fully capable of doing so. For example, Mavroidis discloses multiple actuators used in opposition for flexing/extending a joint (column 13, lines 20-40), a locking feature (column 18, lines 40-45), and programming means for controlling a strength or range of movement (column 13, lines 10-20). It would have been obvious to one of

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ordinary skill in the art at the time the invention was made, upon seeing Mavroidis's device, to perform the recited method steps of the instant claims (i.e., programming a continuous passive motion therapy, splinting, or grasping) for providing a desired therapy for a given condition of a patient. Furthermore, splinting, grasping, and continuous passive motion are well known therapies for movement facilitation devices, and it appears as though the device disclosed by Mavroidis would perform equally well with any of the instantly claimed methods.

Claims 26, 30, 31, 32, 34, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cencer.

Regarding claim 26, Cencer is silent as to using the device for injuries. However, the device disclosed by Cencer is fully capable of being used on a patient following an injury-type event. It would have been obvious to one of ordinary skill in the art at the time the invention was made, upon seeing Cencer's device, to use it for facilitating movement of a joint following one of the claimed events because it is well known in the art that joint movement facilitation is often necessary following such events.

Regarding claim 30, 31, 32, 34, and 35, the device disclosed by Cencer has all of the structural limitations needed to perform the recited method steps and is fully capable of doing so. For example, Cencer discloses a variety of combinations of movement devices that can be used and operated by a programmable computer. It would have been obvious to one of ordinary skill in the art at the time the invention was made, upon seeing Cencer's device, to perform the recited method steps of the instant claims (i.e., programming a continuous passive motion therapy, splinting, or grasping) for providing a desired therapy for a given condition of a patient.

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Furthermore, splinting, grasping, and continuous passive motion are well known therapies for movement facilitation devices, and it appears as though the device disclosed by Cencer would perform equally well with any of the instantly claimed methods.

Claims 13, 18, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mavroidis as applied to claims 1-5, 8, 9, 20, 21, 23, 24, 26, 27, 28, and 29 above, and further in view of Girard (US 4,167,044). Mavroidis is silent as to the specifics of the locking mechanism. Girard discloses a mechanical locking means comprising a ratchet (54) for locking a movement facilitation device at a given angle. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided Mavroidis's device with a mechanical locking means such as a ratchet for locking the device at a given angle or to allow incremental control of the device.

Claims 14-16, 37, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mavroidis as applied to claims 1-5, 8, 9, 20, 21, 23, 24, 26, 27, 28, and 29 above, and further in view of Kinnunen et al. Although Mavroidis discloses sensors for measuring force and position feedback information, Mavroidis is silent as to a force-position sensor comprising a radiation source and detector and a return mechanism. Kinnunen et al. disclose a force position sensor comprising a light source (4), a detector means, and a return mechanism (2) for measuring forces and displacements (abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a force-position sensor similar to that disclosed by



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Kinnunen et al. in the device disclosed by Mavroidis for measuring the forces and positions of the joints.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. DeProspero, Jountras et al., Brimhall, and Singer et al. are cited to show other similar joint movement facilitation devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristen C. Matter whose telephone number is (571) 272-5270. The examiner can normally be reached on Monday - Friday 9-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Justine Yu can be reached on (571) 272-4835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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Art Unit 3771



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8/16/07